

ITEM NO. 1

VALLEY CONNECTIONS UPDATE – TOWN CENTER ALIGNMENT OPTIONS

TRANSIT

CITY OF MESA TRANSPORTATION

MESA, ARIZONA

JUNE 13, 2000

TAB: Valley Connections Update – Town Center Alignment Options
June 13, 2000

INTRODUCTION

Valley Connections was initiated in September 1996 to address transportation needs within the region's highest demand corridor. Previous regional studies have identified the highest travel demand corridor from approximately I-17/Northern to Mesa Drive between University Drive and the Superstition Freeway. Maricopa Association of Governments (MAG) system planning has shown that high levels of unmet travel demand in 2020 will remain in the corridor even with all the existing and committed transit and highway improvements identified in the MAG Long Range Transportation Plan.

The objective of Valley Connections is to identify a viable design concept and scope for a fixed-guideway transit solution to assist in meeting unmet demand in the corridor linking central Phoenix with Tempe and Mesa. The major investment study (MIS) of Valley Connections was completed in May 1998 with the selection of a Locally Preferred Alternative (LPA) and the submission of the MIS Report to the Federal Transit Administration (FTA). FTA has allowed the Valley Connections project to advance to the Preliminary Engineering/Environmental Impact (PE/EIS) stage of planning.

In order to focus the Mesa portion of the PE/EIS work, alignment options within Mesa Town Center need to be further evaluated.

DISCUSSION

The Valley Connections consultant has completed a Technical Memorandum, see attached, that describes the six alignment options within Mesa Town Center and the rationale behind elimination of two of the options.

At this time, staff is seeking input from the TAB on the Mesa Town Center alignment options. Staff will also be discussing the alignment options with the Downtown Development Committee (DDC) and the City Council prior to being discussed with the downtown community.

It is the intent of this process to provide the downtown community with ample opportunities to provide comment on the alternatives prior to a recommended alignment being presented to the TAB, DDC and City Council for final selection.

Report by: Jim Wright 
Transit Administrator



MEMO

CENTRAL PHOENIX/EAST VALLEY LIGHT RAIL TRANSIT PROJECT

To: Jim Wright
From: Marc Soronson
Date: June 1, 2000
Re: Transportation Advisory Board Update

BACKGROUND

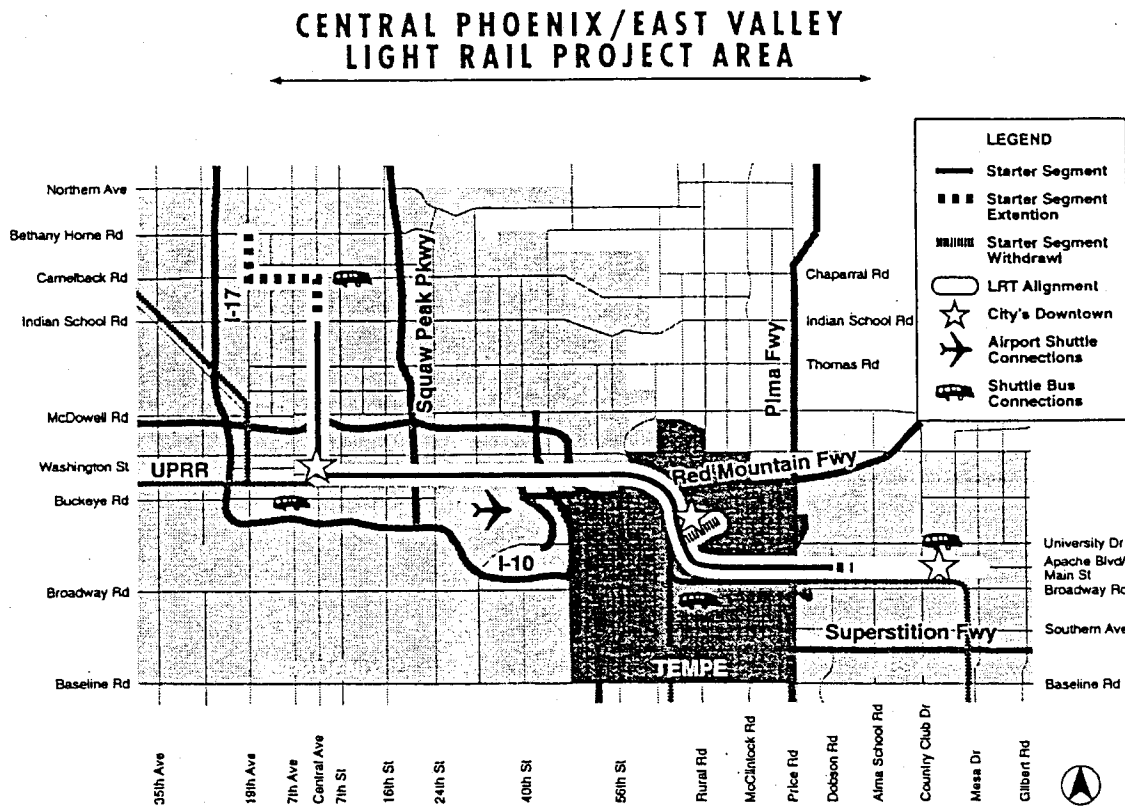
The preliminary engineering/draft environment impact phase of the Central Phoenix/East Valley (CP/EV) light rail transit (LRT) project is continuing. Through the summer of 2000 project staff will be working to complete and refine the following tasks:

- Specific rail alignment and cross-sections that will be selected for light rail transit operation;
- LRT operating plans;
- Traffic plans;
- Station locations;
- Park-and-ride/transit center locations;
- Opportunities for joint development;
- Urban design/architectural guidelines;
- Art integration program;
- LRT and expanded bus integration plans;
- Environmental issues;
- Project cost estimates;
- Financing;
- Securing financial participation agreements based on the project finance plan from the three city partners; and
- Construction program and schedule.

REVISED MINIMUM (PHASE 1) OPERATING SEGMENT (MOS)

As a result of the successful referendum in the City of Phoenix and the light rail component approved by City of Phoenix voters, project staff have requested the Federal Transit Administration (FTA) to modify and extend the limits of the MOS for the CP/EV LRT project from 18.5 miles to 20.3 miles. The request would extend the north end of the corridor, an extension from Central Avenue and Indian School to Chris-Town Mall (Bethany Home Road and 19th Avenue) in Phoenix and re-confirm the east end of the corridor in Mesa from Dobson to the East Valley Institute of Technology (EVIT).

In addition, it is proposed that the Rio Salado segment in Tempe be deferred from the initial construction segment to a later phase of the project. The requested deferral and extension are within the 25-mile CP/EV LRT project study area and would result in a new MOS of 20.3 miles – a net extension of two miles. (See Light Rail Project Area map on following page).



MESA TOWN CENTER ALIGNMENTS

In the City of Mesa's Town Center six alignments (east of Country Club) are being analyzed in the Draft Environmental Impact Statement. Although six are being carried for evaluation, it is the staff's desire to screen the six alternatives down to a preferred alternative that can be included in the Town Center Plan and included in the recently initiated design and construction for First Avenue and other streets in the Mesa Town Center. In addition, the City of Mesa is about to begin a process to complete a Comprehensive Plan that will include Transportation consideration and future extensions of LRT beyond the Mesa Town Center.

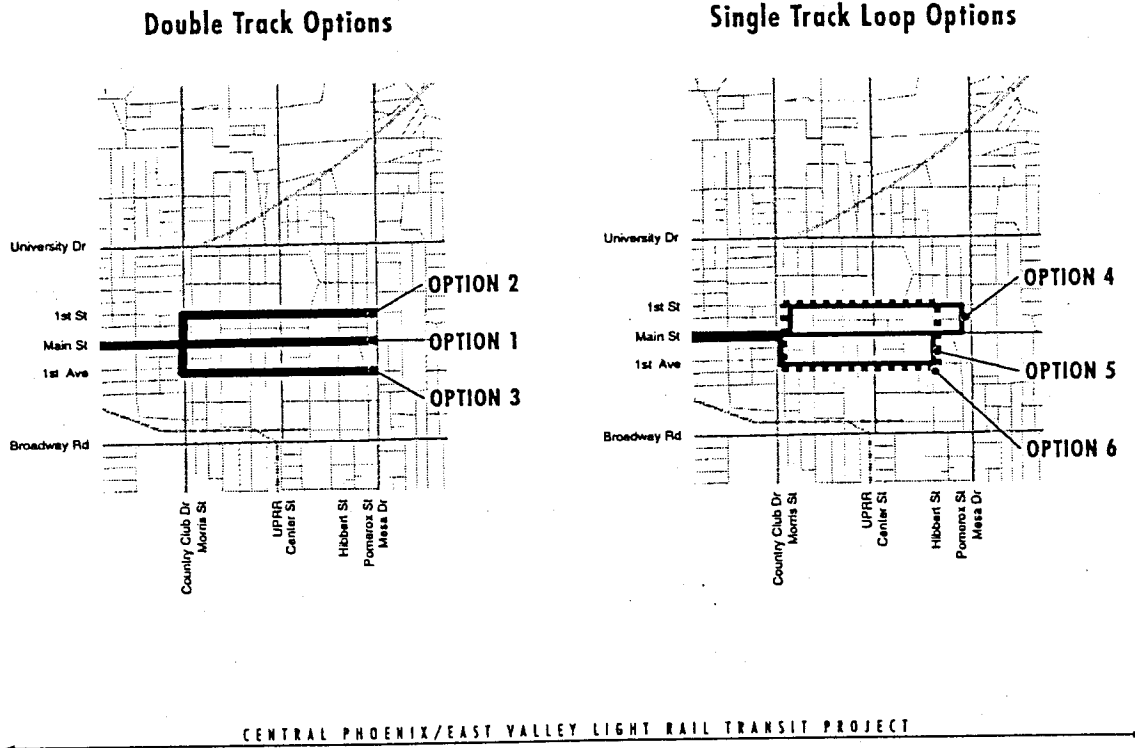
Initial Screening (Tier 1) Evaluation

Based on the direction provided during the development of the *Town Center Concept Plan, 1999*, two basic LRT alignment/design configurations were identified for consideration during the CP/EV Project: a double-track LRT guideway and single-track LRT loop. For each of these configurations, three options were further identified for consideration. The options represent variations on the use of the three main east-west streets running through the Town Center and, are listed below and graphically presented on the following page:

- Option 1: Double-Track on Main Street;
- Option 2: Double-Track on First Street;
- Option 3: Double-Track on First Avenue;
- Option 4: Single-Track Loop on Main Street and First Street;
- Option 5: Single-Track Loop on Main Street and First Avenue; and
- Option 6: Single-Track Loop on First Street and First Avenue.



ALIGNMENT/DESIGN OPTIONS MESA TOWN CENTER TERMINUS/LOOP



Methodology for Tier 1 Evaluation

The Tier 1 evaluation was primarily a qualitative evaluation based on the following seven evaluation criteria, as stated below. Subsequent to the Tier 1 evaluation, a Tier 2 evaluation will be conducted, consisting of a more comprehensive technical and public evaluation during the Summer 2000. The seven Tier 1 evaluation criteria are as follows:

1. Proximity to Activity Centers/Major Attractions Served
2. Redevelopment/Revitalization Inducement Potential
3. Economic Development Inducement Potential
4. Construction Disruption
5. System Cost
6. Passenger Convenience
7. Ease of System Extension

Tier 1 Results

At the May 25, 2000 Mesa Technical Team meeting, staff reviewed the Tier 1 evaluation and rejected Option 2 and Option 3 from further consideration since a double track operation on First Avenue or First Street does not provide adequate access to either the north or south side of the Town Center since each option only serves one half of the Town Center activity points.

Option 1, Option 4, Option 5, and Option 6 were selected for a more comprehensive and public evaluation based on their ability to better serve the current and proposed activity points in the Mesa Town Center.

Tier 2 Process and Schedule

During the Tier 2 process, the four remaining alignment options will be subjected to a more detailed technical and public evaluation designed to narrow the option to one option that would be adopted by the Mesa Council in September/October 2000. This schedule is consistent with the process being developed for both Phoenix and Tempe to provide one alignment option to be advanced. It is the intent of staff to provide a process where the downtown community would have ample opportunities to provide comment and direction on the alternatives prior to them being presented to the TAB, DDC and Council for final selection. In addition, staff will be coordinating the evaluation with the City's design consultant for First Avenue.

The following four options remain for the Tier 2 evaluation process:

Option 1: Double-Track LRT Transitway on Main Street

Double-track LRT transitway on Main Street in the center of Main Street, continuing east from Country Club Drive to Hibbert.

Option 4: Single-Track Main Street/1st Street LRT Loop

Main Street/1st Street Couplet would consist of a single-track "loop" extending from the double-track guideway at Country Club. The eastbound track would continue on Main Street to an eastern terminus at either Pomeroy or Hibbert, at which point it would turn north to 1st Street. At 1st Street, the trackway would head west to Robson, where it would turn south to connect with the westbound track to form a double-track Main Street guideway, west of Robson or Morris.

Option 5: Single-Track Main Street/1st Avenue LRT Loop

Main Street/1st Avenue Couplet would essentially mirror Option 4. Under this option, the eastbound track would depart from the Main Street double-track guideway at either Country Club or Morris, where it would either continue in the street or cut diagonally through the block bound by Main, Robson, 1st Avenue, and Morris. It would then turn east at 1st Avenue and continue in the center of 1st Avenue to Hibbert, where it would turn north to Main Street. At Main Street, the single-track would turn west, eventually connecting with the westbound track of the double-track guideway at either Country Club or Morris.

Option 6: Single-Track 1st Street/1st Avenue LRT Loop

Combine the northern and southern halves of Options 4 and 5. The eastbound track would depart from the Main Street double-track guideway at either Country Club or Morris, where it would either continue in the street or cut diagonally through the block bound by Main, Robson, 1st Avenue, and Morris. It would then turn east at 1st Avenue and continue in the center of 1st Avenue to Hibbert, where it would turn north, crossing Main Street to 1st Street. At 1st Street, the trackway would head west to Robson, where it would turn south to connect with the westbound track on the double-track Main Street guideway.

Distribution: Wulf Grote
Steve Beard

Alignment	Centers/Major Attractions Served	Revitalization Inducement Potential	Inducement Potential	Convenience	South on Center
Option 1 Double-Track LRT on Main Street	<ul style="list-style-type: none"> Main Street Retail/Services Government Center Museum Core Professional Office Core 	<ul style="list-style-type: none"> Main Street Storefronts Maricopa County Complex Wilbur and West 2nd Street Historic District Main Street/Mesa Drive High Density Residential 	<ul style="list-style-type: none"> Main Street Office Development Office/Residential Above Main Street Shops Reinforce Municipal Core 	<ul style="list-style-type: none"> Lowest cost from length and station perspectives High enhancement cost 	<ul style="list-style-type: none"> Most convenient access Straight extension of alignment Bi-directional stations <ul style="list-style-type: none"> Easiest extension to the east (direct along Main) Easy extension to south (single southbound turn at Center from Main)
Option 2 Double-Track LRT on First Street	<ul style="list-style-type: none"> Government Center Museum Core Convention Center/Entertainment Center North Historic Districts Professional Office Core 	<ul style="list-style-type: none"> Maricopa County Complex Wilbur and West 2nd Street Historic District Main Street/Mesa Drive High Density Residential 	<ul style="list-style-type: none"> Reinforce Municipal Core 	<ul style="list-style-type: none"> Relatively low cost from length and station perspectives Low enhancement cost 	<ul style="list-style-type: none"> Convenient access Diversion from Main Street to west Bi-directional stations <ul style="list-style-type: none"> Difficult extension to the east (two additional 90 degree turns) Easy extension to south (single southbound turn at Center from 1st Street)
Option 3 Double-Track LRT on First Avenue	<ul style="list-style-type: none"> Government Center Museum Core Convention Center/Entertainment Center South Neighborhoods/Redevelopment Area Prof Office Core 	<ul style="list-style-type: none"> Maricopa County Complex Old EVIT Complex Southeast/Southwest Neighborhood Redevelopment 	<ul style="list-style-type: none"> Business Park in Southwest Neighborhood Reinforce Municipal Core 	<ul style="list-style-type: none"> Relatively low cost from length and station perspectives Low enhancement cost 	<ul style="list-style-type: none"> Convenient access Diversion from Main Street to west Bi-directional stations <ul style="list-style-type: none"> Difficult extension to the east (two additional 90 degree turns) Easiest extension to south (single southbound turn at Center from 1st Avenue)
Option 4 Single-Track LRT Couplet on Main Street and First Street	<ul style="list-style-type: none"> Main Street Retail/Services Government Center Museum Core Convention Center/Entertainment Center North Historic Districts Professional Office Core 	<ul style="list-style-type: none"> Main Street Storefronts Maricopa County Complex Wilbur and West 2nd Street Historic District Main Street/Mesa Drive High Density Residential 	<ul style="list-style-type: none"> Main Street Office Development Office/Residential Above Main Street Shops Reinforce Municipal Core 	<ul style="list-style-type: none"> High length, station, and enhancement costs 	<ul style="list-style-type: none"> Inconvenient access Partial diversion from Main Street to west Separate eastbound and westbound stations <ul style="list-style-type: none"> Difficult extension to east (loop opened at Main, westbound track would make additional degree turn) Difficult extension to south (loop opened at Center, tracks would make two additional 90 degree turns)
Option 5 Single-Track LRT Couplet on Main Street and First Avenue	<ul style="list-style-type: none"> Main Street Retail/Services South Neighborhoods/Redevelopment Area Professional Office Core 	<ul style="list-style-type: none"> Main Street Storefronts Maricopa County Complex EVIT Complex Southeast/Southwest Neighborhood Redevelopment 	<ul style="list-style-type: none"> Main Street Office Development Office/Residential Above Main Street Shops Business Park in Southwest Neighborhood Reinforce Municipal Core 	<ul style="list-style-type: none"> High length, station, and enhancement costs 	<ul style="list-style-type: none"> Partial diversion from Main Street to west Separate eastbound and westbound stations <ul style="list-style-type: none"> Difficult extension to east (loop opened at Main, westbound track would make additional 90 degree turn) Difficult extension to south (loop opened at Center, tracks would make two additional 90 degree turns)
Option 6 Single-Track LRT Couplet on First Street and First Avenue	<ul style="list-style-type: none"> Government Center Museum Core Convention Center/Entertainment Center South Neighborhoods/Redevelopment Area Professional Office Core 	<ul style="list-style-type: none"> Maricopa County Complex EVIT Complex Southeast/Southwest Neighborhood Redevelopment 	<ul style="list-style-type: none"> Main Street Office Development Office/Residential Above Main Street Shops Business Park in Southwest Neighborhood Reinforce Municipal Core 	<ul style="list-style-type: none"> High length, station, and enhancement costs 	<ul style="list-style-type: none"> Least convenient access Complete diversion from Main Street to west Separate eastbound and westbound stations (greatest separation) <ul style="list-style-type: none"> Most difficult extension to east (loop opened at Main, both tracks would make two additional 90 degree turns) Difficult extension to south (loop opened at Center, tracks would make two additional 90 degree turns)

VALLEY



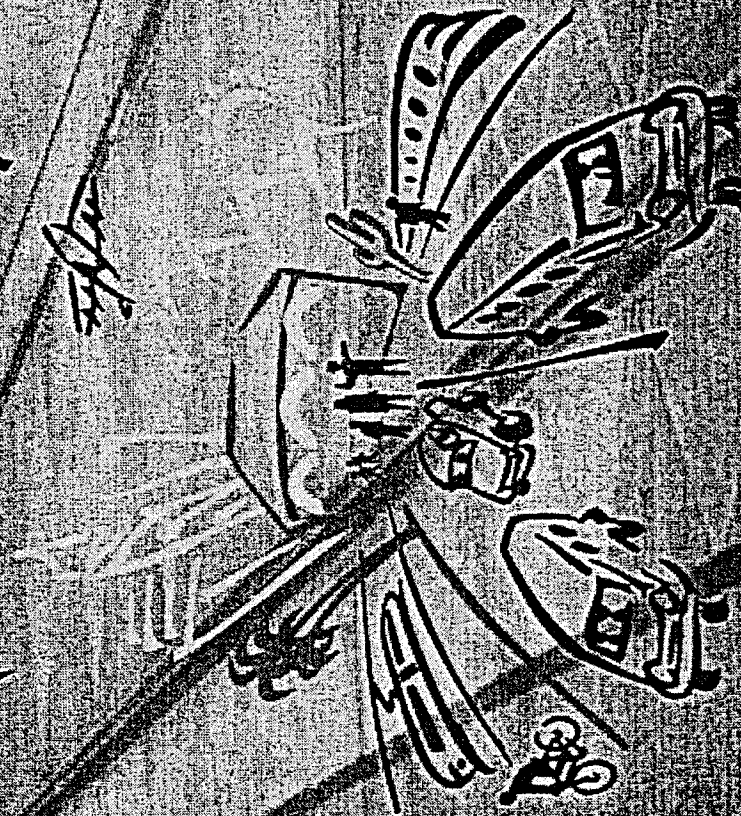
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CENTRAL PHOENIX/
EAST VALLEY
LIGHT RAIL
TRANSIT PROJECT

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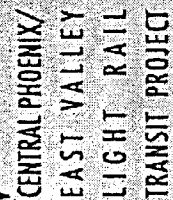
CONNECTIONS

after



LRT Project Schedule

Draft Environmental Impact Statement (EIS) Circulation	August 2000
Complete Concept. Eng. (10% level)	August 2000
Public Hearing	September 2000
Final EIS	January 2001
Record of Decision	Spring 2001
Final Design Initiated	July 2001
FTA Approves Full Funding Grant Agreement	Spring 2002
Construction Begins	January 2003
Testing Begins	Spring 2003
Operation	Winter 2003



Six Alignment Options Evaluated

- Option 1: Double-Track LRT on Main Street
- Option 2: Double-Track LRT on First Street
- Option 3: Double-Track LRT on First Avenue
- Option 4: Single-Track LRT Couplet on Main Street and First Street
- Option 5: Single-Track LRT Couplet on Main Street and First Avenue
- Option 6: Single-Track LRT Couplet on First Street and First Avenue



Evaluation Criteria

Access to North Town Center Activity Centers

Museum Core

Professional Office Core

Municipal Services

Convention and Entertainment Center

Historic Districts (Glenwood/Wilbur and West 2nd Street)

Mesa Verde Resort

Access to Main Street Businesses

Access to South Town Center Redevelopment Opportunities

Arts and Entertainment Center

County Courts Justice Complex

Aquatics Complex

Overall Community Development Benefit

Construction Impacts

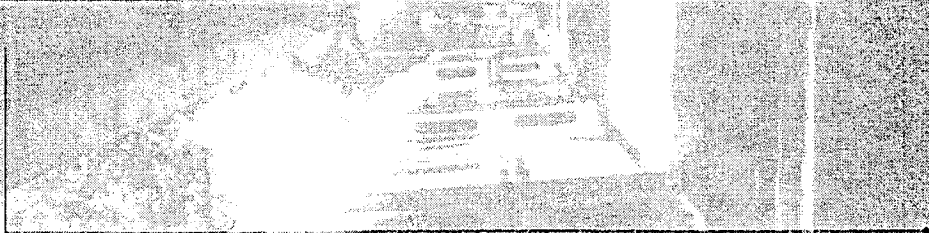
Cost Factors (stations, trackway, enhancements)

Passenger Convenience (ridership)

LRT Extensions

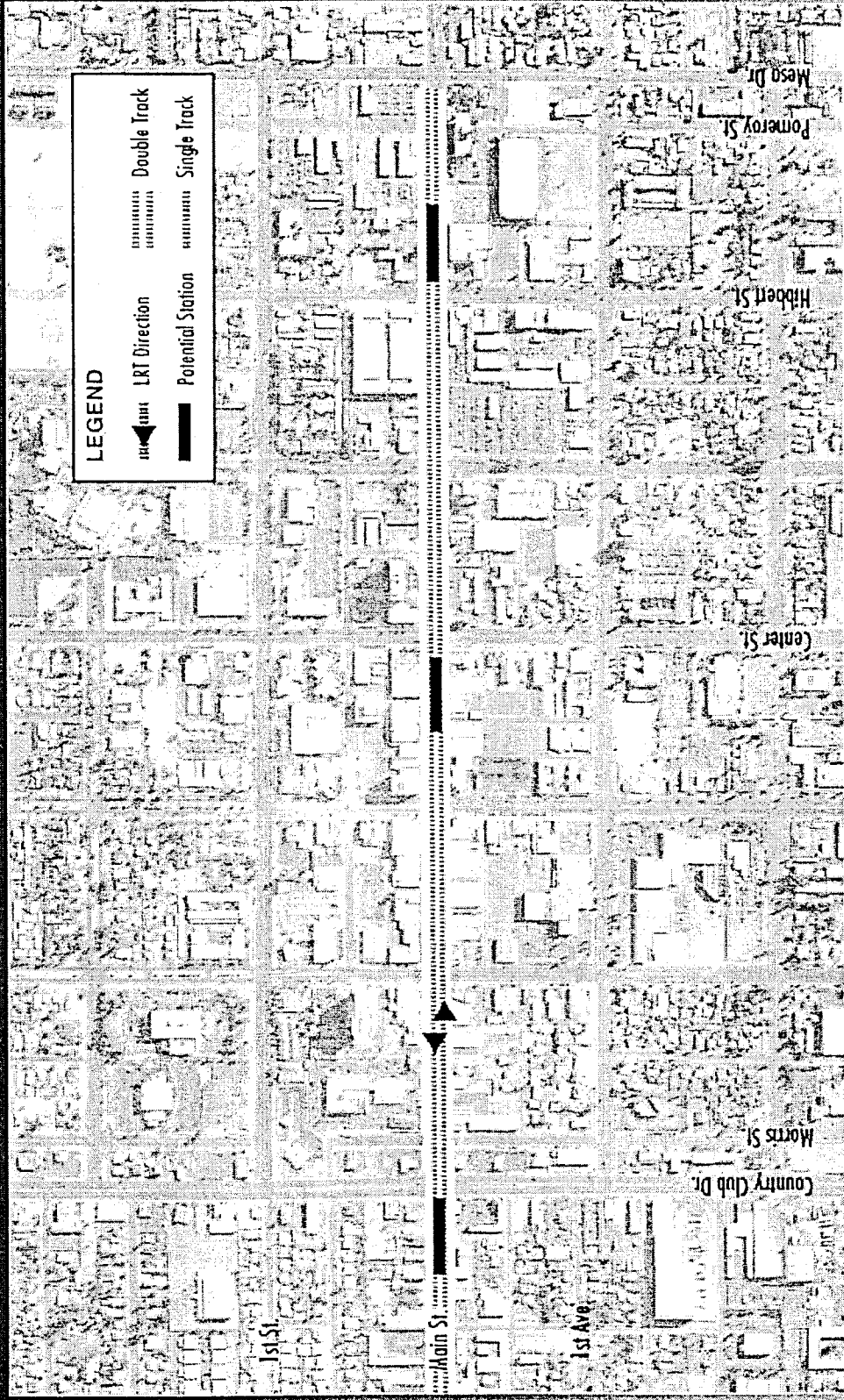


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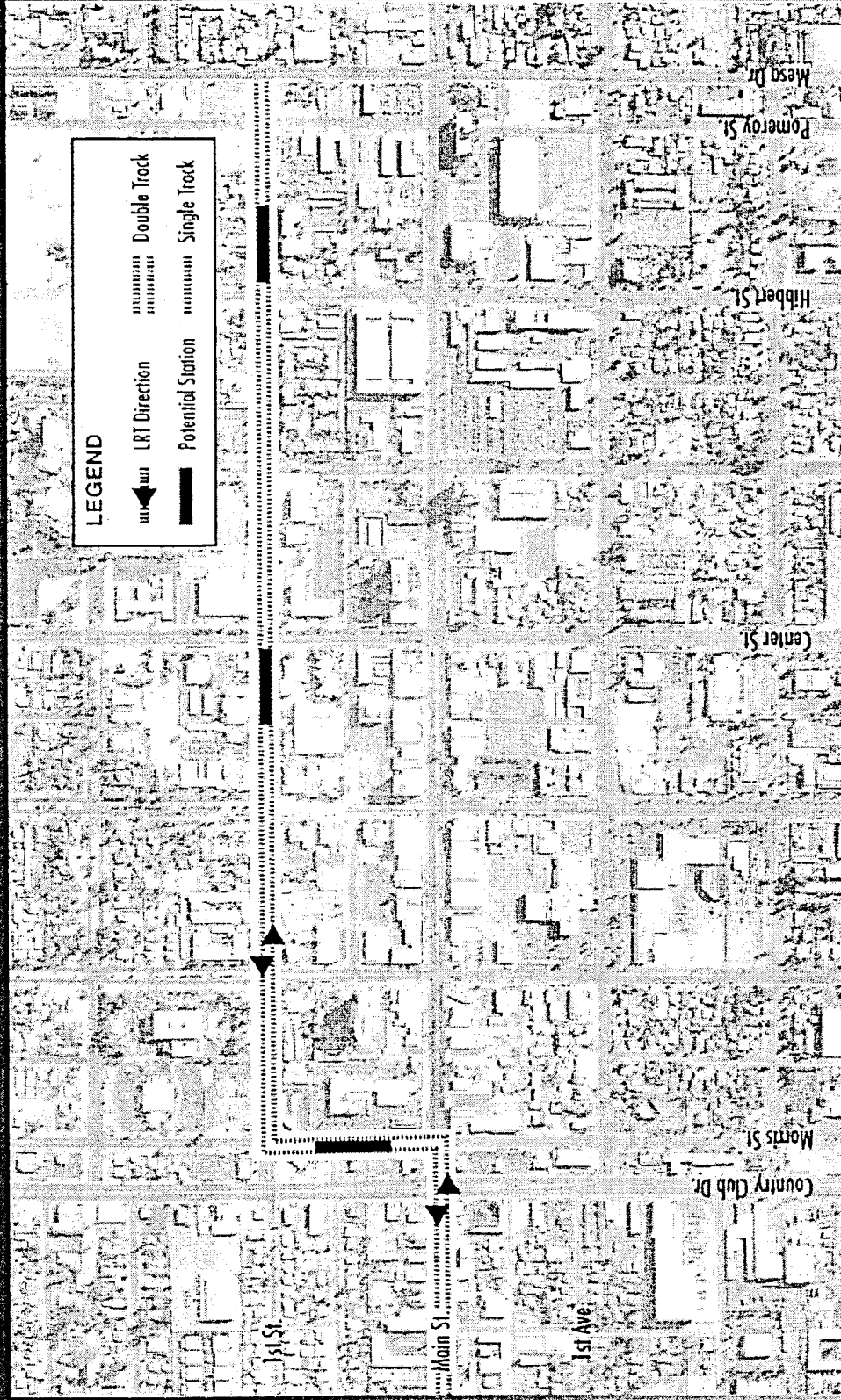


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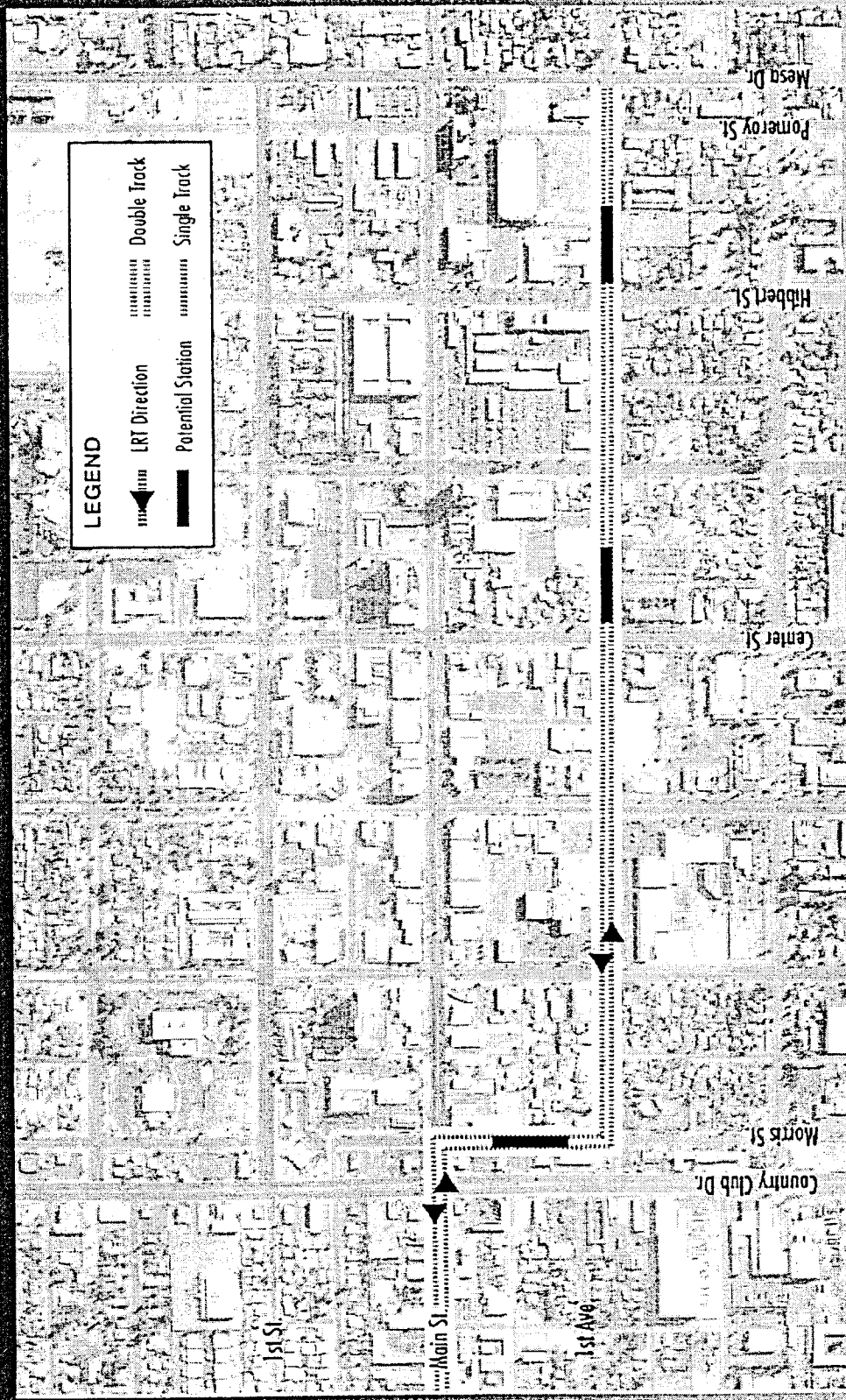
Option 1 Double-Track LRT on Main Street

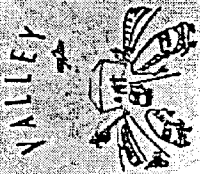


Option 2 Double-Track LRT on First Street (rejected)



Option 3 Double-Track LRT on First Avenue (rejected)

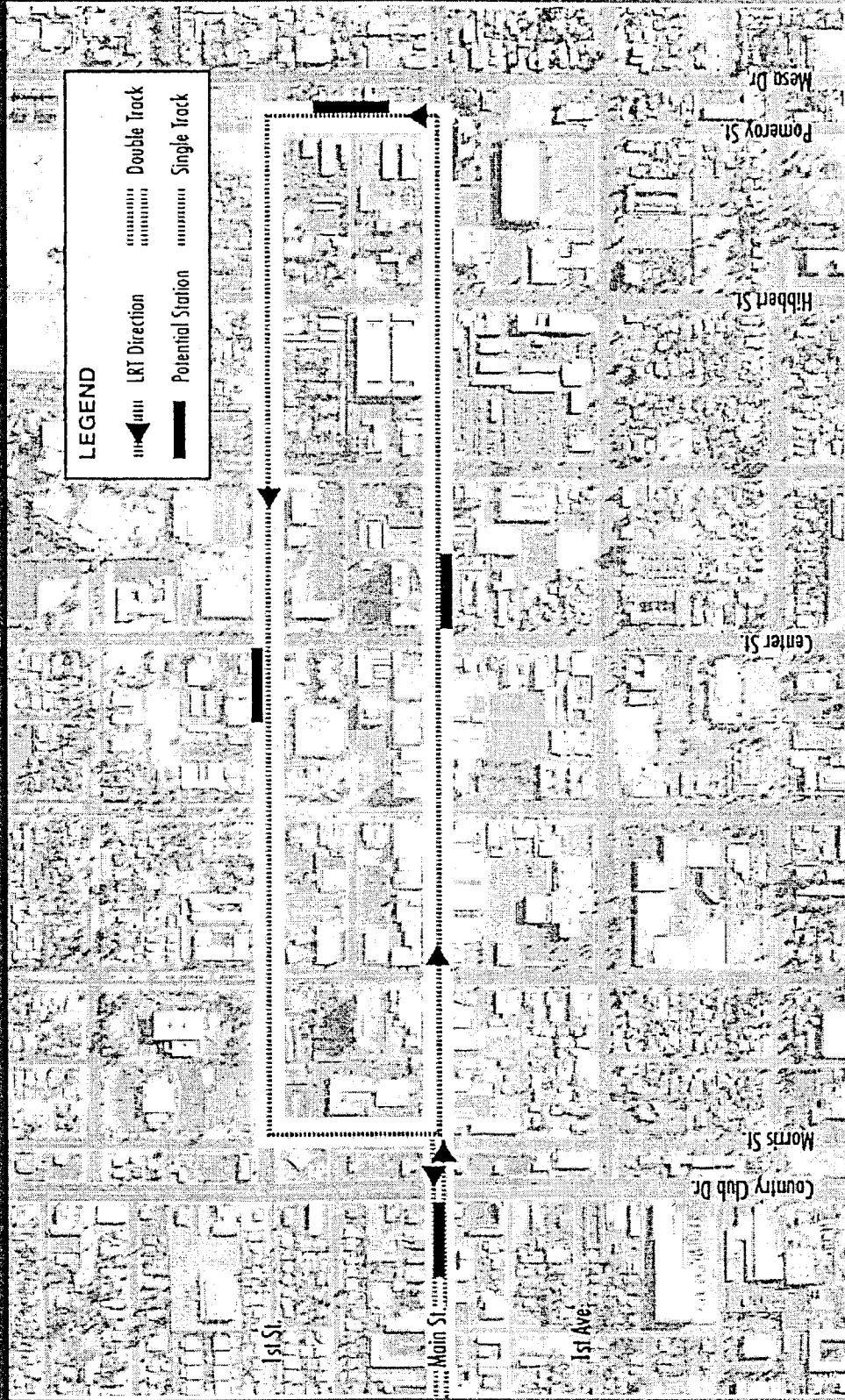




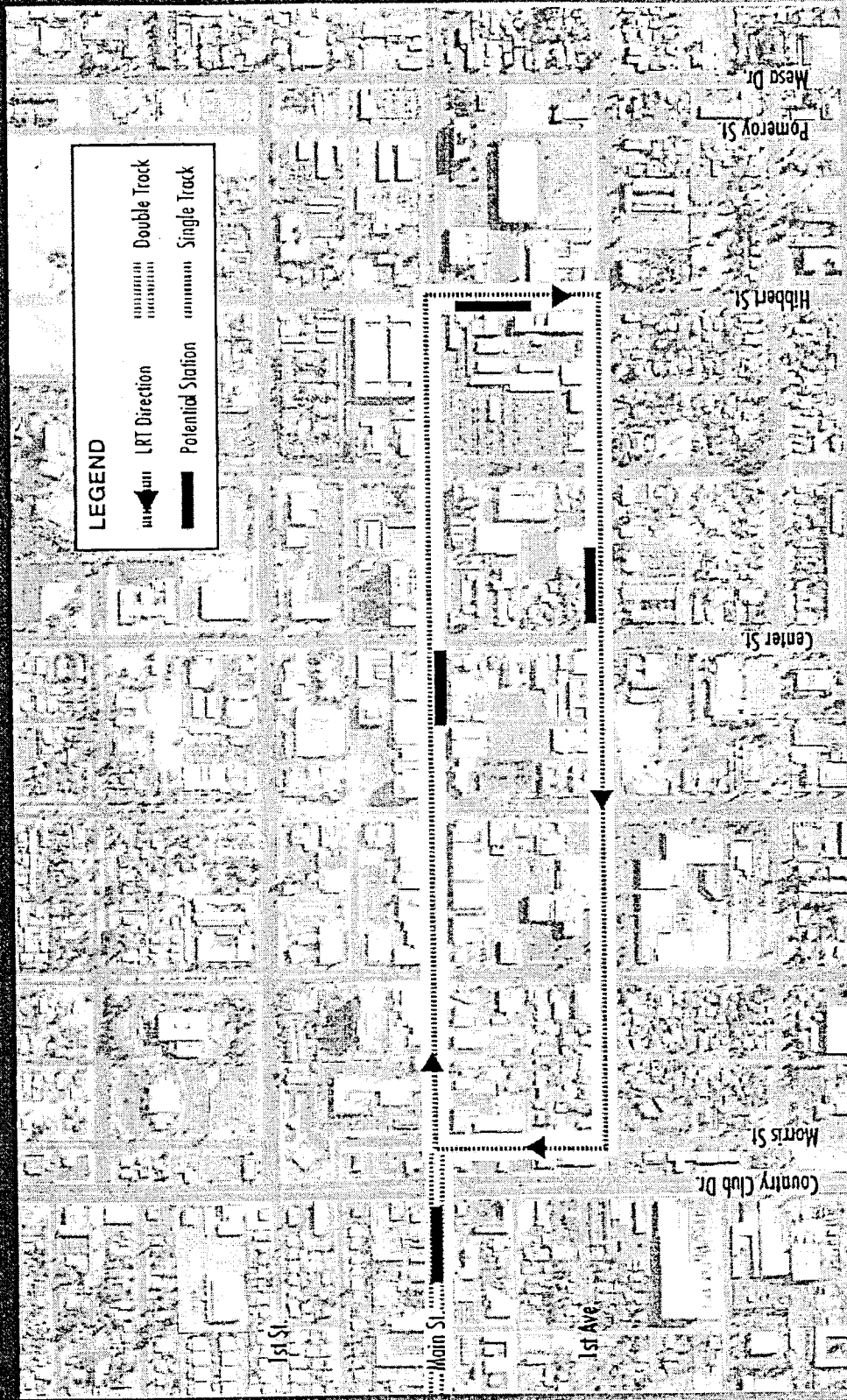
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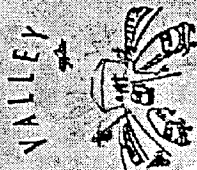
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Option 4 Single-Track LRT Couplet on Main Street and First Street



Option 5 Single-Track LRT Couplet on Main Street and First Avenue



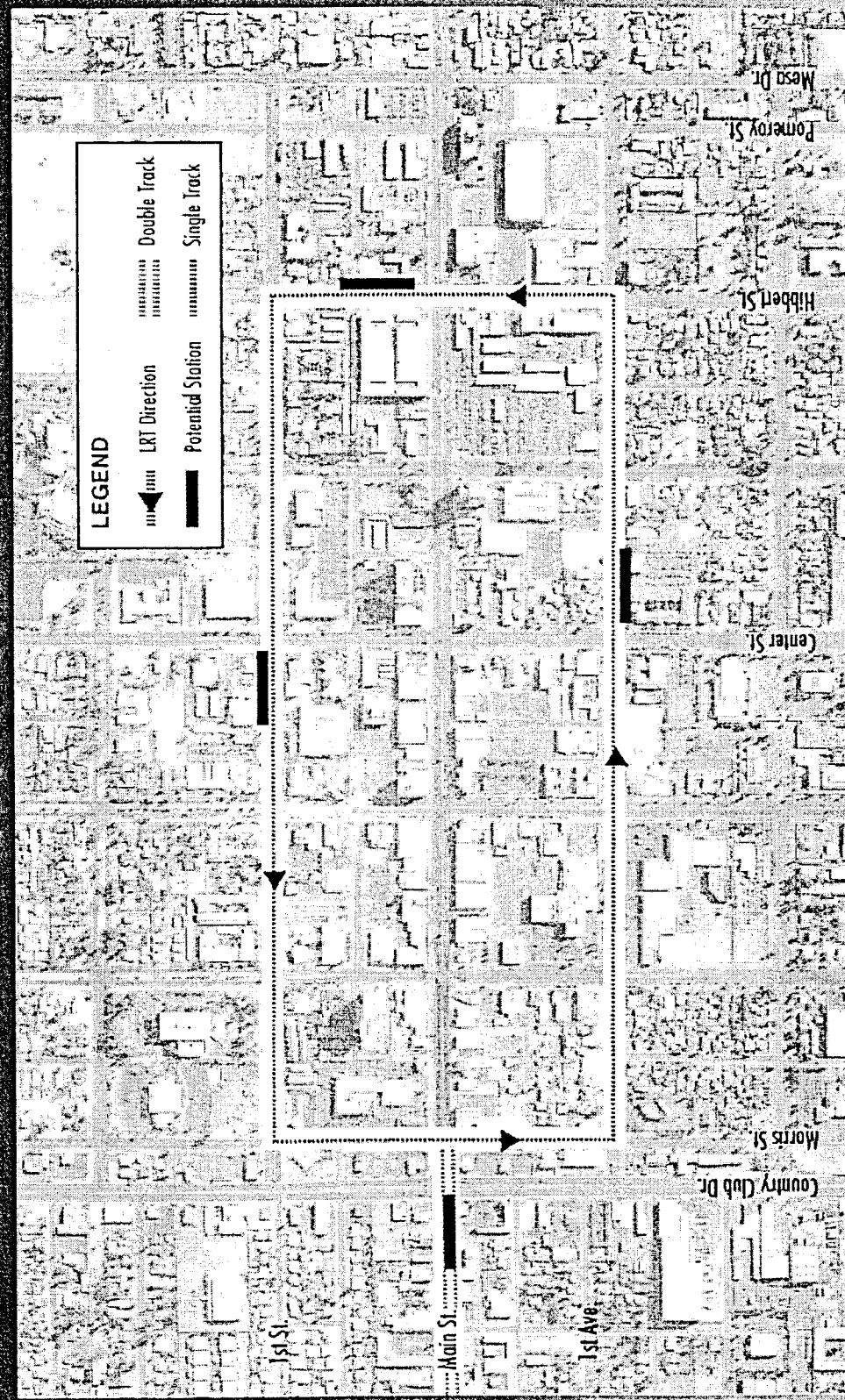


VALLEY CONNECTIONS

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Option 6

Single-Track LRT Couplet on First Street and First Avenue



Option 1: Double-Track LRT on Main Street

- Best reinforcement of Main Street revitalization objectives (direct access / enhanced visibility)
- Excellent access to Arts & Entertainment Center
- Potential to aggravate previously disrupted business and property owners along Main Street
- Lowest cost capital costs (stations and length of trackway)
- High enhancement cost (streetscape)
- Most convenient passenger access
- Easiest eastward extension along Main
- Easy southward extension along Center (single south bound turn at Center)
- Consistent with direction from Town Center Master Plan

VALLEY



CONNECTIONS

Option 2: Double-Track LRT on First Street

Rejected

- Best access to existing government center employment
- Best access to existing and future convention and entertainment activity centers
- Construction disruption isolated to First Street
- Low capital costs (stations and trackway length)
- Low enhancement cost
- Convenient passenger access
- Difficult extension to east (2 additional 90° turns)
- Easy extension to south (single southbound turn at Center)

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Option 3: Double-Track LRT on First Avenue

Rejected

- Most consistent with redevelopment / revitalization objectives for southern Town Center
- Good access to Arts & Entertainment Center
- Potential for disruption of previously disrupted business and property owners along First Avenue
- Construction disruption isolated to First Avenue
- Low capital costs (stations and trackway length)
- Low enhancement cost
- Convenient passenger access
- Difficult extension to east (2 additional 90° turns)
- Easy extension to south (single southbound turn at Center)



Option 4: Single-Track LRT Couplet on Main Street and First Street

- Good combination of enhanced access to Main Street businesses and First Street employment and entertainment activity centers
- Good access to Arts & Entertainment Center
- Two streets subject to construction disruption
- Aggravation of previously disrupted business and property owners on Main Street
- High length, station, and enhancement costs
- Potentially confusing passenger access (separate eastbound and westbound stations)
- Difficult extension to east (loop opened at Main, westbound track would make additional 90° turn)
- Difficult extension to south (loop opened at Center, 2 additional 90° turns)



Option 5: Single-Track LRT Couplet on Main Street and First Avenue

- Good combination of enhanced access to Main Street businesses and First Avenue redevelopment and revitalization opportunities
- Excellent access to Arts & Entertainment Center
- Two streets subject to construction disruption.
- Aggravation of previously disrupted business and property owners on Main Street and First Avenue.
- High length, station, and enhancement costs
- Potentially confusing passenger access (separate eastbound and westbound stations)
- Difficult extension to east (loop opened at Main, westbound track would make additional 90° turn)
- Difficult extension to south (loop opened at Center, 2 additional 90° turns)



Option 6: Single-Track LRT Couplet on First Street and First Avenue

- Broadest area of land use and economic development influence
- Good combination of enhanced access to First Street employment and entertainment activity centers and First Avenue redevelopment and revitalization opportunities
- Avoids disruption of Main Street streetscape enhancements
- Two streets subject to construction disruption
- Aggravation of previously disrupted business and property owners on First Avenue.
- High costs related to number of stations and length of trackway
- Most difficult extension to east (loop opened at Main, both tracks would make 2 additional 90° turns)
- Difficult extension to south (loop opened at Center, tracks would make two additional 90° turns)

Evaluation Results

Options Rejected

- ◆ 2: Double-Track First Street
 - Completely bypasses Southern Town Center
- ◆ 3: Double-Track First Avenue
 - Completely bypasses Northern Town Center

Options Retained

- ◆ 1: Double-Track Main Street
- ◆ 4: Single-Track Main Street and First Street
- ◆ 5: Single-Track Main Street and First Avenue
- ◆ 6: Single-Track First Street and First Avenue



General Development Committee Report

Date: July 6, 2000
To: General Development Committee
Through: Mike Hutchinson, City Manager
From: Bryan Raines, Asst. to the City Manager
Subject: Status Report on the Negotiations for the Redevelopment of Site 21 and Site 24.
Council District #4

Purpose

The purpose of this report is to provide an update to the General Development Committee (GDC) on the status of the negotiations for the redevelopment of Site 21 and Site 24. Attached, labeled exhibit No. 1, are vicinity maps depicting the location of both redevelopment sites.

Background/ Discussion

Site 21

As directed by the City Council the Request for Proposals (RFP) for the redevelopment of Site 21 was advertised in October 1999. We received one response to the RFP from ILR Holdings Inc. (ILR). On April 3, 2000 the City Council approved the recommendation of the GDC and Downtown Development Committee (DDC) that the City enter into a 120-day exclusive negotiation period with ILR for the redevelopment of Site 21. The 120-day period expires on August 1, 2000.

ILR'S Proposal

ILR's proposal for the redevelopment of Site 21 includes retail/restaurant uses on the ground floor of the building and refurbishment of the interior and exterior of the building to develop a Class "A" type commercial office complex that will attract tenants representing the high end of the market.

Project Schedule

We have been working with Malcolm Ross, President of ILR, on the development of a Memorandum of Understanding (MOU) that will specify what

the City and ILR will do for the redevelopment of Site 21. The following is the proposed schedule for the consideration of the MOU:

1. Consideration by the DDC on July 20, 2000.
2. Consideration by the GDC on July 25, 2000.
3. Review by the City Council (study session) on September 7, 2000.
4. Consideration by the City Council on September 25, 2000.

The Redevelopment Agreement will be considered by the City Council within 60 days of approval of the MOU. Based on discussions with Mr. Ross, the tentative dates for construction are February 2001 to January 2002.

Status Report

During the 120-day negotiation period the City and ILR have discussed various issues to be included in the MOU. Staff has also worked with Larry Woolf, Finance Director, on the completion of the cost benefit analysis. The MOU and the cost benefit analysis for the project will be presented to the DDC on July 20, 2000.

Mr. Ross has been active in pre-leasing the building. BPLW has already expressed an interest in leasing 10,000 s.f. of space. Mr. Ross's pre-leasing efforts have also generated interest from restaurants including a microbrewery. ILR may own the restaurant and microbrewery and find operators to run the establishments. BPLW is working with ILR on developing a new design for the building. The conceptual designs will be presented to the DDC and GDC when the MOU is considered.

Site 24

As directed by the City Council, the RFP for the redevelopment of Site 24 was advertised in November 1999. We received three responses to the RFP for the redevelopment of this site. On April 3, 2000, the City Council approved the recommendation of the GDC and Downtown Development Committee (DDC) that the City enter into a 120-day exclusive negotiation period with both Lenhart's Ace Hardware (Lenhart's) and Palm Court Investments, LLC. (Palm Court) for the redevelopment of Site 24. The 120-day negotiation period expires on August 1, 2000.

Lenhart's Proposal

Lenhart's proposal includes a freestanding 32,000 square foot two-story building, with retail on the ground floor and some office space on the second floor. The design and construction of this building will serve as gateway feature into the downtown area.

Palm Court Proposal

The design and construction of this portion of the project will be compatible with the Lenhart's Ace Hardware building.

Palm Court's proposal includes the following three phases of development:

- First phase includes a 22,500 square foot expansion for Mesa Discount TV & Appliance.
- Second phase includes a 12,500 square foot two-story building, designed for retail on the ground floor and office space on the second floor.
- Third phase would include upgrading the appearance of the existing City Center Plaza (current Mesa Discount location).

Although two parties are involved with this project, the entire site will be developed as one project. This project shall include compatible building design features and shall be constructed with the same type of building materials. Shared parking and landscaping areas are also incorporated into the site design.

Project Schedule

We have been working with both Ken Lenhart, owner of Lenhart's Ace Hardware and David and Lou Moses, owners of Palm Court Investments, on the development of a Memorandum of Understanding (MOU) that will specify what the City and both Lenhart and Palm Court Investments will do for the redevelopment of Site 21. The following is the proposed schedule for the consideration of the MOU:

1. Consideration by the DDC on August 17, 2000.
2. Consideration by the GDC the week of August 28, 2000 (tentative).
3. Review by the City Council (study session) on September 7, 2000.
4. Consideration by the City Council on September 25, 2000.

The Redevelopment Agreement will be considered by the City Council within 60 days of approval of the MOU. Based on discussions with Mr. Lenhart and the

Moses brothers, the tentative dates for construction are July 2001 to January 2002.

Due to workload issues, the MOU is being considered approximately 30 days later than the MOU for Site 21.

Status Report

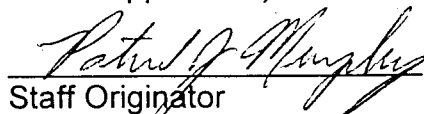
During the 120-day negotiation period the City, Lenharts, and Palm Court have discussed various issues to be included in the MOU. These issues and the cost benefit analysis for the project will be presented to the GDC the week of August 28, 2000. Staff is working with Larry Woolf, Finance Director, on the completion of the cost benefit analysis.

Ken Lenhart, owner of Lenhart's Ace Hardware is currently working with Ace Hardware's corporate offices to increase the available merchandise stock in the proposed new facility.

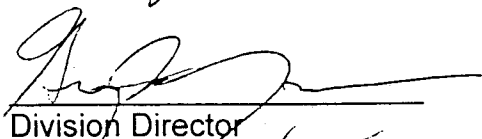
Palm Court is currently working on contracts with local residential contractors to design a showroom center within the proposed new expansion area. This showroom will display various kitchen options and layouts offered to homeowners by specific residential contractors.

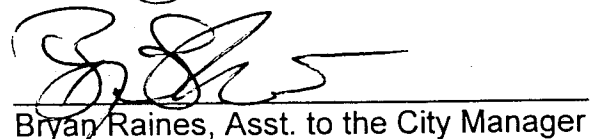
Concurrence

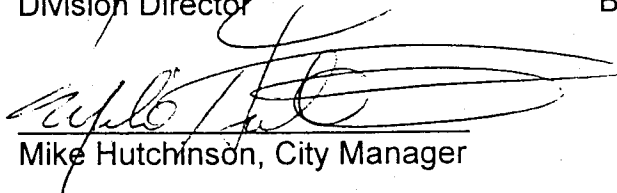
We are working with the City Attorney's Office on the development of the MOU. Staff is also working with Larry Woolf, Finance Director, on the cost/benefit analysis for the projects. Furthermore, these projects will be reviewed by the various City departments who will make recommendations on the project (special use permit for the outdoor seating, the streetscape improvements, and design review application).


Staff Originator


Staff Originator


Division Director


Bryan Raines, Asst. to the City Manager


Mike Hutchinson, City Manager

Attachments:

Exhibit No. 1

Vicinity Maps Site 21 and Site 24



CITY OF
MESA

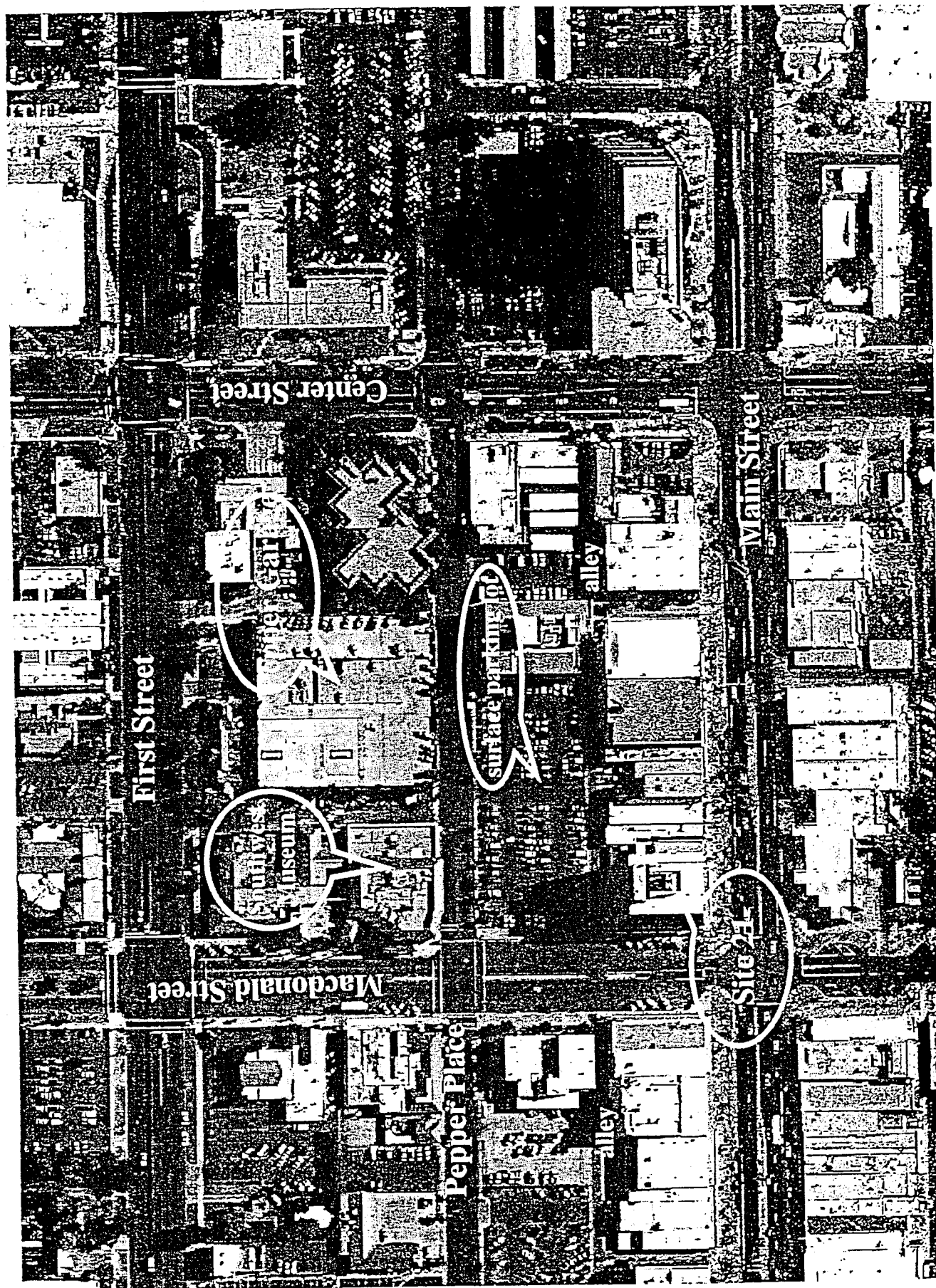
Great People. Quality Service.

FORMER BANK ONE BUILDING SITE 21



Redevelopment

EXHIBIT 1



City of Mesa Redevelopment Site 24 Boundaries





ITEM NO. 3

Engineering

MEMORANDUM

DATE: July 3, 2000
TO: General Development Committee
THROUGH: Mike Hutchinson
FROM: Jack Friedline
SUBJECT: District Cooling Facility for Downtown Mesa
City of Mesa Project No. 00-119
District No. 4

Purpose and Recommendation

The purpose of this report is to provide information on the concept of a district cooling system to serve downtown Mesa.

It is recommended that staff be directed to proceed with the design and construction of the initial phase of a district cooling system for downtown Mesa.

Background

In mid-January of this year, the City received an unsolicited proposal from Northwind Arizona for a district cooling system, which as proposed, would serve the Mesa Verde project and some City facilities in the downtown area. Additionally, the system would have the potential to serve other customers in the downtown area. Northwind Arizona, which is a company formed by APS Energy Services and Unicom, working with Comfort Systems USA (a national mechanical, plumbing and electrical contractor) and Interactive Leisure Resources, Inc., developed a concept to construct a chilled water plant integrated into the parking garage for the Mesa Verde project. As proposed, this chilled water plant would serve the Mesa Verde project and would involve the construction of chilled water lines to serve some City facilities as well as potentially other facilities in the downtown area.

In March, staff presented this concept to the General Development Committee and received direction to continue analysis of this proposal and to evaluate other options for a district cooling system.

Discussion

Based on the direction to proceed with further analysis and to evaluate other options, staff worked with a consultant to further evaluate the district cooling concept. Attached is an executive summary of that study which describes their findings. Their findings indicate a district cooling system makes economic sense for the City at this time. Further, as part of this study, an option evaluated was the concept of the City developing its own district cooling system. This proposal consists of the City initially developing a district cooling system with the construction of the new Arts and Entertainment Center. This idea consists of enlarging the cooling plant originally planned for the Arts and Entertainment Center and installing chilled water piping to enable the City to serve the Indoor Aquatics Complex in addition to the Arts and Entertainment Center. Attached is a map which depicts the potential initial development concept.

In addition, consideration has been given to being able to expand the proposed district cooling systems to be able to serve additional City facilities and/or other customers. This would provide the opportunity for the City to establish a district cooling system as another utility. This could potentially provide additional revenue to the City from this new utility, reduce the City's cost for cooling City facilities and serve as a catalyst for downtown redevelopment.

Lastly, at this time, staff is recommending that the City proceed with an initial plan for a district cooling system for City facilities in downtown Mesa. Additionally, staff is recommending that the City retain ownership of the district cooling system.

Alternative

One alternative is for the City not to construct a district cooling system in downtown Mesa and to continue to provide cooling facilities on an individual basis. This is not recommended because the cost to provide cooling for each individual facility is higher than a district cooling system.

Another alternative is for the City to become a customer of a private provider of district cooling. This is not recommended because of the loss of direct control of the cooling of City facilities.

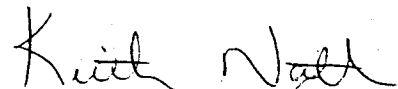
Fiscal Impact

The total project cost to design and construct the initial segment of the district cooling system is estimated at approximately \$2,800,000.00. The initial segment will provide the necessary cooling for the Arts and Entertainment Center and Indoor Aquatics Complex, and provide additional capacity for public or private cooling needs in the downtown area. Funding for this project is proposed by staff to come from the following sources:


1. Re-allocate funding for individual cooling systems from the Arts and Entertainment Center and Aquatic Center projects. At this time, staff would recommend \$1,129,000.00 from the Arts and Entertainment Center project and \$366,000.00 from the Aquatics Center project.
2. Fund the remaining portion, \$1,305,000.00 using general funds.

Concurrence

The Utility Department and Community Services Department concurs with the recommendations.


Keith Nath – Division Director


Jack Friedline – Department Manager


Michael Hutchinson – City Manager



II

EXECUTIVE SUMMARY

An analysis was performed in order to determine the costs for the City of Mesa to build their own central cooling plant to serve existing and future City of Mesa buildings and potentially other future commercial customers. A central cooling plant serving other customers would have the benefit of being a possible source of revenue for the City. Additionally, higher utilization of the central plant would result in lower costs per ton-hour of cooling. However, revenue generation was not accounted for in our analysis.

The costs for building a new central plant were analyzed based upon an initial connected cooling load and load increases in years 5 and 10. The analysis performed was based upon a twenty year study life. Based upon the analysis performed, the average costs per ton-hour are \$.1485, .1348 and .1384 for Phases 1 & 2, 3A and 3B, respectively. The calculations presented in the proposal done by Northwind reflect average ton-hour costs of approximately \$.1700. By comparison, the rate calculated by Northwind is in the range of 15 to 22 percent greater than our calculated values, depending upon which phase is used for comparison. A copy of the Northwind data/calculations is included in the Appendix section of this report for reference. Another important item to note is that the above cooling costs for each phase do not include the benefits of utilizing a hydronic economizer cycle (free cooling). Although the energy benefits of a hydronic economizer cycle are difficult to enumerate without performing a detailed energy simulation, savings in the range of 10 - 20% are not unrealistic and would increase the cost differential between our calculated ton-hour values and those presented by Northwind.

Present value calculations performed indicate that Phases 3A and 3B are very close, with 3A being slightly more advantageous (i.e. least negative). Depending on the locations of potential future buildings to be connected, Phase 3B may be more advantageous.

In addition to the central plant analysis, an analysis was performed assuming individual cooling plants were installed at each building for Phases 1, 2 and 3. Based upon the calculations, average costs per ton-hour are \$.1634 and \$.1590 for Phases 1 & 2 and Phase 3, respectively. Again, these values do not include the benefits of utilizing a hydronic economizer cycle. A Summary of Costs table is provided at the end of this section which indicates the cost for each phase for each analysis. An average annual cost for each phase is provided as well as a total lifetime cost.

The calculated values outlined above and included in the Summary of Costs table should be useful in assisting the City of Mesa in making the decision as to whether or not to pursue a central chilled water cooling plant. However, it is important to summarize all the advantages of utilizing a central chilled water cooling plant, as some advantages are intangible and difficult to enumerate. The economies of a central chilled water cooling plant become very attractive as compared to providing individual cooling plants or packaged cooling systems at each building. We have provided below a discussion of the most significant advantages that a central cooling plant would offer.



1. Lower Equipment First Cost

- A. Individual cooling systems provided in each building must be sized for the maximum cooling load for that building. With a central cooling plant serving several different buildings, the load diversity factor increases, such that the total cooling load is typically 10 to 30 percent lower than the sum of the cooling loads for each building. This results in smaller equipment being required for the central cooling plant (i.e. chillers, cooling towers, pumps, etc.), and thus, less first cost.
- B. Providing separate cooling systems for each building results in having to purchase multiple items of equipment. Purchasing several smaller pieces of equipment instead of fewer and larger pieces of equipment inherently costs more.

2. Lower Maintenance Cost

- A. Providing separate cooling systems at each building results in more items of equipment having to be maintained. This directly increases the cost of maintenance in both materials, internal manpower and outside service contracts.
- B. Providing separate cooling systems at each building will likely result in equipment of numerous different manufacturers being installed. This will present additional challenges for maintenance staff, since they will have to be trained in the operation of each manufacturer's equipment and will have to readily stock more equipment parts.

3. Redundancy and Reliability

- A. Providing separate chilled water cooling systems at each building, with only one chiller, cooling tower, chilled water pump and condenser water pump, results in each building being very vulnerable to a forced shutdown should any of these items of equipment fail. Depending on the type of failure and the required repairs, temporary shutdown of the facility could be required, which would likely have a negative financial impact on the City. A central cooling plant would incorporate multiple chiller systems (chiller, cooling tower and pumps). These systems would be sized such that if one chiller system were to fail, approximately two-thirds or more of the installed cooling capacity would still be operational.

4. Energy Savings

- A. A central chilled water cooling plant inherently provides higher efficiency cooling than any other type of cooling system available



(i.e. packaged DX cooling systems, water source heat pumps, air cooled chilled water systems, etc.).

5. Less Equipment Space and/or Less Rooftop Equipment

- A. Providing separate cooling plants at each building will eventually result in more building space being built to house the cooling equipment than that required by a central cooling plant, directly resulting in more building cost. Additionally, providing HVAC systems utilizing packaged equipment (i.e. rooftop units, split systems, etc.) results in aesthetic issues and/or increases the likelihood of roof problems due to multiple penetrations and traffic from maintenance.

6. Noise Control

- A. Providing a central location for the cooling plant equipment keeps the noise generated by such equipment localized and easier to manage. This may be particularly advantageous for the City of Mesa since many of the building functions are administrative, which are inherently sensitive to noise.

7. Less Electrical Distribution

- A. Since approximately one-half of a building's electrical service is typically attributed to the cooling equipment, a central cooling plant with its own electrical service results in the ability to significantly downsize the electrical service required for each building. This results in less building space required for the electrical service equipment, smaller transformers required outside of each building, etc. All of these items obviously will result in less cost.

8. Potential Source of Revenue

- A. As previously mentioned, a City owned central cooling plant could offer a source of revenue for the City by selling chilled water to commercial customers. Again, the higher the utilization of the central plant, the lower the cost will be of generating chilled water. Revenue generated from selling chilled water could be used to maintain and operate the central plant and possibly help offset the cost of building the central plant.

An argument that could be made against a central chilled water cooling plant is that it is susceptible to service interruptions from catastrophic events such as failure of multiple chillers, central plant building fire, loss of electrical power to central plant, break in the main chilled water supply or return piping, loss of make-up water to the central plant, etc. In other words, the old phrase "all your eggs are in one basket" is applicable. However, the likelihood of most of these events occurring is very remote. In addition, contingencies can be

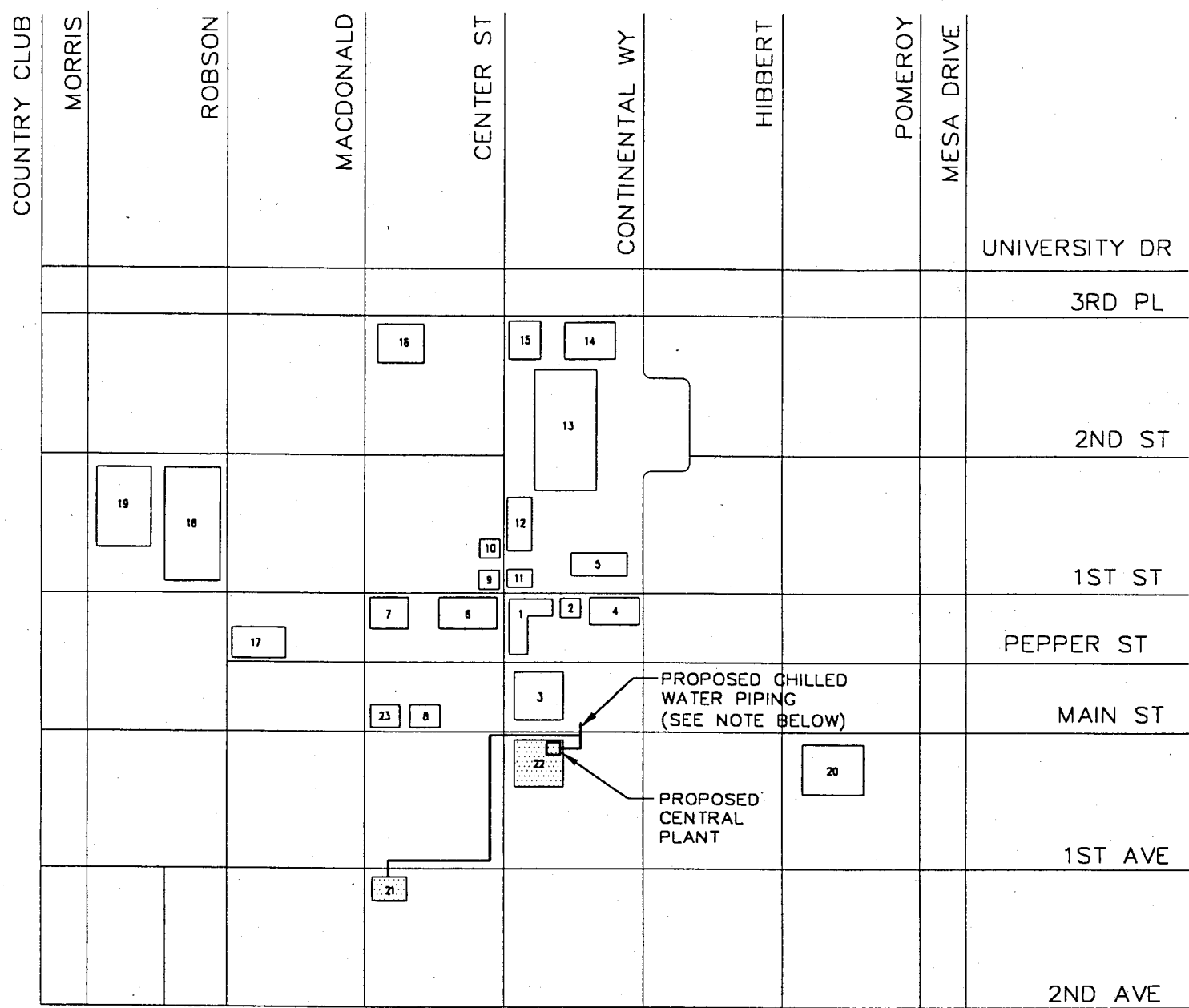


designed into the central plant and piping distribution system to reduce the potential of a complete failure. For instance, a make-up water storage tank could be installed which could provide enough water for operating the central plant until water trucks could be sent to refill the tank. Emergency chilled water piping connections could be provided, such that upon the failure of multiple chillers, temporary chillers could be delivered to the site and connected. The main chilled water distribution piping could be looped, thereby providing flexibility to reduce downtime in the event of a break.

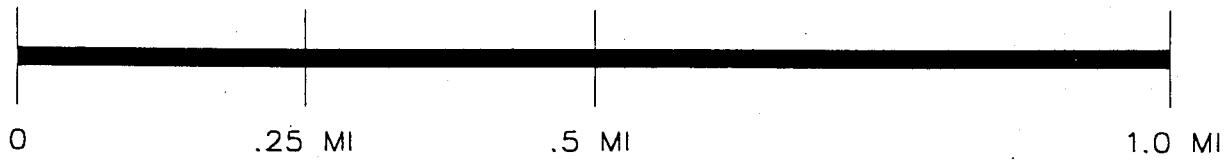
Based upon the findings of our analysis and the above advantages associated with utilizing a central plant, we feel that any master plan for the future development of the City of Mesa should include the construction of a central cooling plant. It is important to note when evaluating the costs per ton-hour for each alternative, a 1 or 2 cent difference translates into a significant amount money over the lifetime of the system. Also, the more the plant is utilized, the lower the cost will be per ton-hour. Thus, the more cooling loads that are added, the lower the cost will be. Given the fact that the City of Mesa has plans for significant growth (i.e. Mesa Arts & Entertainment Center, Aquatics Center, Millennium Master Plan Developments, etc.) and the fact that many existing building cooling systems are at or near the end of their useful life, it makes economic sense for the City of Mesa to pursue centralized cooling.

Given the information we have provided , we hope that the City will now have a firm understanding of the benefits of utilizing a central chilled water cooling plant as well as a measuring stick for evaluating proposals from outside providers.

Site Chilled Water Piping (Phase 1 – 2000 TO 2005)



SCALE: 1.5" = 1/4 MILE



LEGEND:

 Phase 1

NOTE:

PIPING LAYOUT IS SCHEMATIC.
LOCATION OF PIPE WOULD BE
DETERMINED IN DESIGN.

- 1 Municipal Building
- 2 City Council Chambers
- 3 Mesa City Plaza
- 4 Information Services
- 5 Main Library
- 6 Fire Station #1
- 7 Mesa Southwest Museum
- 8 Mesa Town Center Corp.
- 9 Parks, Recreation & Cultural
- 10 Mesa Chamber of Commerce

- 11 Post Office
- 12 Mesa Arts Center
- 13 Mesa Community/Conference Center
- 14 Mesa Amphitheatre
- 15 Rendezvous Center
- 16 Mesa Senior Center
- 17 Arizona Museum for Youth
- 18 Police Department
- 19 City Court
- 20 Tri-City Community Services

- 21 Aquatics Center
- 22 Mesa Arts & Entertainment (Future)
- 23 Bank One Building



ITEM NO. 4

City Council Report

Date: July 3, 2000
To: General Development Committee
Through: Mike Hutchinson
From: Jack Friedline
Subject: Mesa Drive and University Drive Intersection Improvements
City of Mesa Project No. 98-69
Council District No. 1 and No. 4

Purpose and Recommendation

The purpose of this report is to provide information to the Committee on Staff's preferred alignment for improving the Mesa Drive and University Drive intersection.

The recommendation is to authorize Staff to proceed with the project by presenting the project to the Transportation Advisory Board and schedule a public meeting on the preferred roadway alignment.

Background

The proposed intersection improvements extend from Centennial Way to Pioneer Street along University Drive, and from 1st Street to south of 6th Street along Mesa Drive. The project limits are shown on the attached vicinity map labeled Exhibit "A".

Both University Drive and Mesa Drive are major arterial streets. In this reach, both roadways consist of four (4) lanes (two in each direction) with a painted median. The existing roadways are at or near capacity with traffic volumes in the range of 38,000 and 26,000 vehicles per day on University Drive and Mesa Drive, respectively. The Maricopa Association of Governments forecasted traffic volumes in the intersection are projected to continue to increase.

The intersection will be widened to accommodate projected traffic volumes and the traffic generated from the proposed Mesa Verde project. The proposed Mesa Verde project is a large-scale commercial development/water park which is bounded by University Drive and 2nd Street on the north and south, and by Centennial Way and Mesa Drive on the west and east, respectively.

Discussion

The University Drive and Mesa Drive intersection is currently experiencing congestion problems during the peak hours. As the traffic volumes continue to increase, the intersection will not be able to effectively handle the increased volumes without improvements. In addition, the proposed Mesa Verde project will generate more congestion and delays and contribute to the deterioration of the intersection's level of service. As a result, Staff has prepared a preferred alignment to widen the existing roadways to provide six (6) lanes (3 in each direction) with a painted median. Additional left turn and right turn lanes are proposed at the major arterial intersection and at Mesa Verde's entrances. The proposed project also includes curb and gutter, sidewalk, landscaping, streetlights, traffic signals and relocation of 69kv electric lines owned and operated by the City of Mesa.

Staff's preferred alignment for the widening of University Drive is generally centered eighteen (18) feet south of the section line west of Mesa Drive, and generally centered four (4) feet north of the section line east of Mesa Drive. Staff's preferred alignment for the widening of Mesa Drive is generally centered 16-feet west of the section line south of University Drive, and tapers back to the section line north of University Drive.

During the review and selection of the preferred alignment, Staff considered several other alignments and analyzed the impacts and costs of each alternative. Each alignment was overlaid onto arterial photographs to analyze the extent of impact on adjoining properties. After analyzing the extent of impact and associated costs, the preferred alignment was developed.

Alternatives

Two alternatives were considered. They are as follows:

1. Minor Improvements to Intersection

This alternative consisted of providing only additional turn lanes at the intersection with no additional through lanes.

This alternative is not recommended since it does not effectively reduce traffic congestion and delays to an acceptable level.

2. No Improvement


This alternative is not recommended since it will result in more traffic congestion and delays due to the projected increase in traffic volumes and due to the proposed development of the Mesa Verde project.

Fiscal Impact

The estimated cost of this project is \$4,905,000, which includes approximately \$1,788,000 for right-of-way acquisitions.

Concurrence

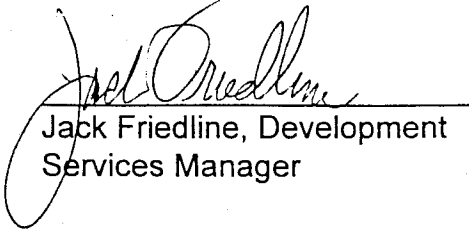
The Utility Department, Police Department, Fire Departments and Redevelopment Division concur with this preferred roadway alignment.



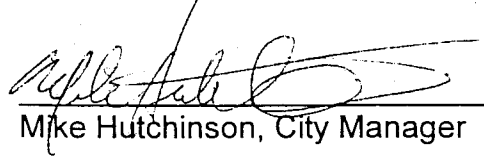
Peter Knudson, Assistant City Engineer



Keith Nath, Division Director



Jack Friedline, Development
Services Manager



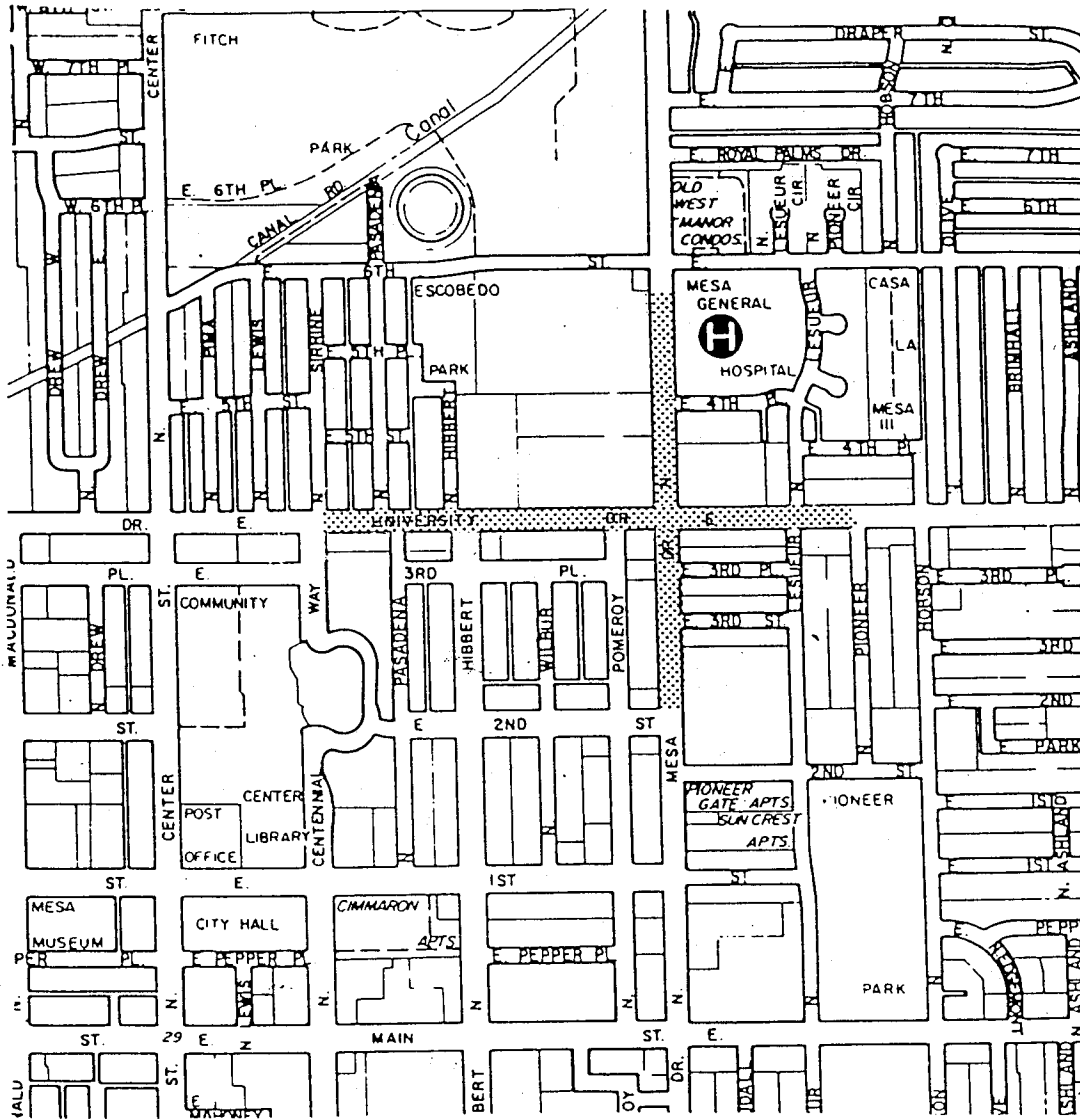
Mike Hutchinson, City Manager



NORTH
NOT TO SCALE

EXHIBIT "A"

PROJECT NO. 98-69



PROJECT LIMITS

VICINITY MAP